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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/766,250

01/28/2004

Giorgio Bordini

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25542

7590

11/21/2005

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EXAMINER

SPISICH, GEORGE D

ART UNIT

PAPER NUMBER

3616

DATE MAILED: 11/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/766,250	Applicant(s) BORDINI, GIORGIO	
	Examiner George D. Spisich	Art Unit 3616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 12-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/13/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election of Invention I without traverse in the paper mailed August 24, 2005 is acknowledged. Claims 1-11 read on elected Invention I.

Specification

The disclosure is objected to because of the following informalities:

Throughout the specification, there is improper spacing between words and at times separating letters of a word. See at least page 2, lines 16-17, where there is "along th" and "tractors e front support".

Appropriate correction is required.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the relation of the front support member being in front of the engine of the vehicle (as in claim 9) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 7 claim "a central body". It is unclear what this central body is of. It appears that the central body may be of the axle, but in claim 1, line 6-7, it is claimed that there is an inner shaft centered under the central body. This may then be the central body of the vehicle (as could be deemed from claim 1, lines 1-2).

Claim 2 is unclear. It is unclear claim that the front axle produces a twofold reduction in turning radius by "reducing a wheelbase of a vehicle". There is a limitation to some unknown reference vehicle wheelbase and turning radius which Applicant's invention is compared to. Applicant's invention must be claimed on its own structure and detail.

Claim 7, lines 18-20 are unclear. It is unclear to claim that "the suspension is swept back at the same sweep-back angle as each axle shaft". The suspension appears to be of multiple and various components of varying orientation and it is unclear to claim that the entire suspension is swept back at the same angle (in at least that the fluid cylinder of the suspension is oriented vertically).

In claim 10, line 3, it is unclear if "the other end" is of the fluid actuator or of the bottom arm. Also, the phrase "as a whole" in line 5 is inherently unclear and also unnecessary.

Claim 11 is unclear. It is unclear by the words "axle shaft" what is being claimed. Examiner is unclear if Applicant is claiming the intermediate portion.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Youmans (USPN 4,081,049) provided in Applicant's IDS.

Youmans (as best shown in Figure 9 at least), discloses a suspended, articulated front axle having a inner shaft centered under a central body, and at least one intermediate shaft portion (19n, 19m) having a longitudinal axis of symmetry that slopes by a sweep back angle with respect to a line perpendicular to a longitudinal axis of symmetry of the vehicle, wherein the sweep back angle is such that an outer end of the intermediate portion is located further back with respect to an inner end of the intermediate portion is a forward traveling direction of the vehicle.

Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Pond et al. (USPN 6,036,201) provided in Applicant's IDS.

Pond et al. (as best shown in Figures 13 and 14 at least), discloses a suspended, articulated front axle having a inner shaft (extending from motor 80) centered under a central body, and at least one intermediate shaft portion (82) having a longitudinal axis of symmetry that slopes by a sweep back angle with respect to a line perpendicular to a

longitudinal axis of symmetry of the vehicle, wherein the sweep back angle is such that an outer end of the intermediate portion is located further back with respect to an inner end of the intermediate portion is a forward traveling direction of the vehicle.

The suspension of Pond et al. includes top and bottom parallel arms both in the form of a double fork, and connected at their outer ends to a cup-shaped articulated supported (as broadly interpreted). With respect to the limitation that the suspension is swept back at the same angle, it is broadly interpreted that the suspension meets this limitation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Youmans (USPN 4,081,049).

Youmans discloses a sweep back angle that is shown to produce a different angle between the front wheels (see Figure 9). This difference in angle would produce what is well-known in the art as "differential steering". With respect to providing a two-fold reduction in turning radius, it would be considered to have been obvious to one of ordinary skill in the art at the time the invention was made to vary the sweep back angle

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of the front axle intermediate portion to provide the desired reduction in turning radius, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272,205 USPQ 215 (CCPA 1980). The maximum value of the sweep back angle as in claim 3, would be considered a desired range also obvious to one of ordinary skill in the art.

The intermediate portion sloping by the sweep back angle is an intermediate shaft of the axle shaft. The intermediate shaft is connected at one end to a inner shaft (within the motor) by a second joint and at the other end to an outer shaft (wheel carrier shaft) by the first transmission joint. The joints are universal joints.

Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pond et al. (USPN 6,036,201).

Pond et al. discloses a sweep back angle that is shown to produce a different angle between the front wheels (see Figure 14). This difference in angle would produce what is well-known in the art as "differential steering". With respect to providing a two-fold reduction in turning radius, it would be considered to have been obvious to one of ordinary skill in the art at the time the invention was made to vary the sweep back angle of the front axle intermediate portion to provide the desired reduction in turning radius, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272,205 USPQ 215 (CCPA 1980). The maximum value of the sweep back angle as in claim 3, would be considered an desired range also obvious to one of ordinary skill in the art.

The intermediate portion sloping by the sweep back angle is an intermediate shaft of the axle shaft. The intermediate shaft is connected at one end to an inner shaft (within the motor 80) by a second joint and at the other end to an outer shaft (wheel carrier shaft) by the first transmission joint. The type of joint is not disclosed, although they would appear to be universal joints.

It would have been obvious to use universal joints in the shaft connection as the universal joint is a well know joint in the wheel and axle art and it is within the ordinary skill of one in the art to use a well known structure to transmit the rotative forces to the wheel, while maintaining the ability of the joint to have variable orientations as the universal joint provides.

Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pond et al. (USPN 6,036,201) in view of Osburn et al. (USPN 6,568,696)

Ponds et al. discloses a bottom (86,86a) and top (84,84a) arm connected at their inner ends to a lateral side of a front support member provided in front of the engine of the vehicle and forming part of the vehicle chassis, wherein the front support member supports the central body (either directly or indirectly). The bottom arm is hingeably connected to one end of a fluid actuator (88), the other end of the actuator being connect to the chassis of the vehicle for varying the stiffness of the suspension as a whole. It is also shown that each axle shaft is positioned substantially centrally between the bottom and top arms. However, Ponds et al. does not show an articulated cup

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shaped support adapted to house a hub carried and the hub carrier being hingeably connect to the articulated support by means of aligned hinges.

Osburn et al. shows an articulated cup shaped support (26) adapted to house a hub carried (24) and the hub carrier being hingeably connect to the articulated support by means of aligned hinges (36A,36B).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the wheel carrier and pivot arrangement of Pond et al. with the articulated hinged wheel carrier arrangement as taught by Osburn et al. so as to provided a stable and durable arrangement for steering and suspending the vehicle.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Abbruzzi et al. (USPN 4,761,018), Villeneuve (USPN 6,866,114), Kozyra et al. (USPN 4,618,159), Bobard (USPN 3,765,697).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to George D. Spisich whose telephone number is (571) 272-6676. The examiner can normally be reached on Monday-Friday 9:00 to 6:30 except alt. Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on (571) 272-6669. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

George D. Spisich
November 13, 2005


11/14/05
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